

American Fruit Grower

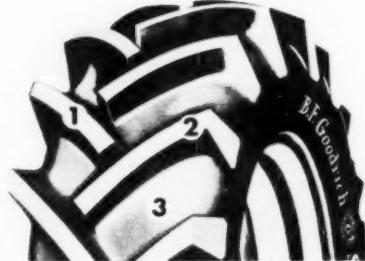
AUGUST . 1953



B.F. Goodrich announces a new, bigger tire—



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② BIGGER SHOULDERS
for longer wear

③ BIGGER ALL AROUND
for more pull

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BIGGER! More powerful! It's America's newest rear wheel tractor tire—the B. F. Goodrich Power-Grip!

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The B. F. Goodrich Power-Grip tractor tire is bigger and better in every way. It pulls better, gets you through the rough-

est going without wasting valuable time and fuel. It's the biggest tire value on the market today. See new Power-Grip tires at your B. F. Goodrich retailer's store. The address is listed under Tires in the Yellow Pages of your phone book. Or send in the coupon below.



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Town _____

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LETTERS TO THE EDITOR

Quart Containers for Cider

Dear Editor:

Because of the increased effort on the part of many New England growers to sell a larger portion of their fruit direct to the consumer, either from the packing house or roadside stands, cider has come to be quite an important item.

Containers are the most difficult part of the cider program. The one commonly used is the one-gallon glass jug. Many of these are returned and require extensive washing which few growers are equipped to do, particularly in cold weather. Other objections to these jugs are the space they take up in a home refrigerator and the experience many people have of the cider starting to ferment before they have a chance to use it.

I am told that a large quantity of cone-shaped paper quart bottles were sold in Ohio last year for this purpose. I would appreciate any information you can furnish me.

Worcester, Mass. Ernest D. Clark

A manufacturer of these containers, is the Cincinnati Cordage and Paper Co., East Wayne and Scott Sts., Lima, Ohio.

The experience of one grower, Wesley Orbaker of Williamson, N. Y., showed that the cone-shaped paper quart containers met with very good acceptance with the public. At the beginning of the season, he used cases which held one bottle up and one down alternately. However, these cases would not stand shipping for any great distance without getting a large percentage of leaks. He then got some new cases in which the bottles all stand upright with a die-cut piece of cardboard which fits over the tops of the bottles to keep them from rattling.—Ed.

Liked Issue on Growth Regulators

Dear Editor:

Your May number of AMERICAN FRUIT GROWER was very interesting to me because there was so much information on growth regulators. I have been using growth regulators for thinning for about four years, and I was especially interested in the article on thinning apples. I also use NAA to prevent cracking of cherries. I feel that both have paid off, especially in regards to thinning apples. It seems to me that the weather is a deciding factor more than anything else.

I have enjoyed reading your magazine very much.

Sebastopol, Calif. William D. Hurst

Wanted: New Varieties of Apples

Dear Editor:

The Tree Fruit Experiment Station here has an established plot for testing new varieties of apples, few of which show any commercial possibilities.

It has occurred to me that with new varieties being constantly propagated and many old varieties of great popularity being grown in certain localities some further research is needed in the hopes that new varieties will turn up that will fill a gap in our production line.

While our demand for winter apples is pretty well taken care of, due to greatly expanded population here in the northwest there is a demand for earlier varieties. For instance, we need an early outstanding red

apple. We also need one that will mature with Delicious and compete with it for dessert quality and with a high color that can be grafted onto Delicious trees as a pollinizer.

I would be glad to hear from experiment stations and growers, both domestic and foreign, who have a variety they consider outstanding, whether it is an old variety, a new variety, or a sport or mutation with a view to establishing a correspondence and obtaining scion wood for testing purposes.

I now have the following varieties: Rome Beauty; Red Rome; Stayman; Yellow Transparent; Whitney No. 20; Lodi; McIntosh; Winesap, including red strains; Delicious; Red Delicious (Red Wine, Starkling, Richardson); and Northern Spy. Route 1, Wenatchee, Wash. J. C. Goodner

Wants Scions of St. Lawrence Apple

Dear Editor:

Your magazine is read from cover to cover at our house, and I especially enjoyed the May issue and the article, "Old Variety Orchard." However, as I looked over the list, I was disappointed not to find an old variety of apple called the St. Lawrence, which was a favorite here in northern New York and Canada. This apple was an early fall variety, ripening a little later than Duchess. It had stripes on one side and on the side where the sun shone on it, it was red. Its flavor was delicious. There is one tree near here that resembles the St. Lawrence, but the flavor is not the same.

I would give a lot for just one scion of this variety for grafting. Several people in this town have been talking about this variety and others we used to grow. It seems a shame that we have thoughtlessly let this apple disappear. I would appreciate hearing from readers who would be able to furnish me with a scion or scions of the St. Lawrence apple.

I am a 4-H leader for a group of boys and have just now finished a project of collecting apple tree worm nests. We destroyed over 15 million. This year I hope to start a project for each boy to plant an apple tree in this little town. I think there are less than one dozen apple trees here now, whereas as less than 25 years ago everyone had an apple tree in his back yard.

Fort Covington, N. Y. Mrs. Marion Russell

The St. Lawrence apple once did very well in Western New York, but achieved its best perfection in the Lake Champlain region and the St. Lawrence Valley, according to the book, Apples of New York, by S. A. Beach. However, it was not recommended for general cultivation. If any of our readers have scions of the St. Lawrence apple, we know Mrs. Russell would be glad to hear from them.—Ed.

Wanted: Scions of Missouri Pippin Apple

Dear Editor:

Can any reader of AMERICAN FRUIT GROWER furnish me with scions of the old Missouri Pippin apple? I would gladly pay for them. I have tried many nurseries and experiment stations to find this fine old variety but so far without success.

Cheney, Kans. Ted Neises

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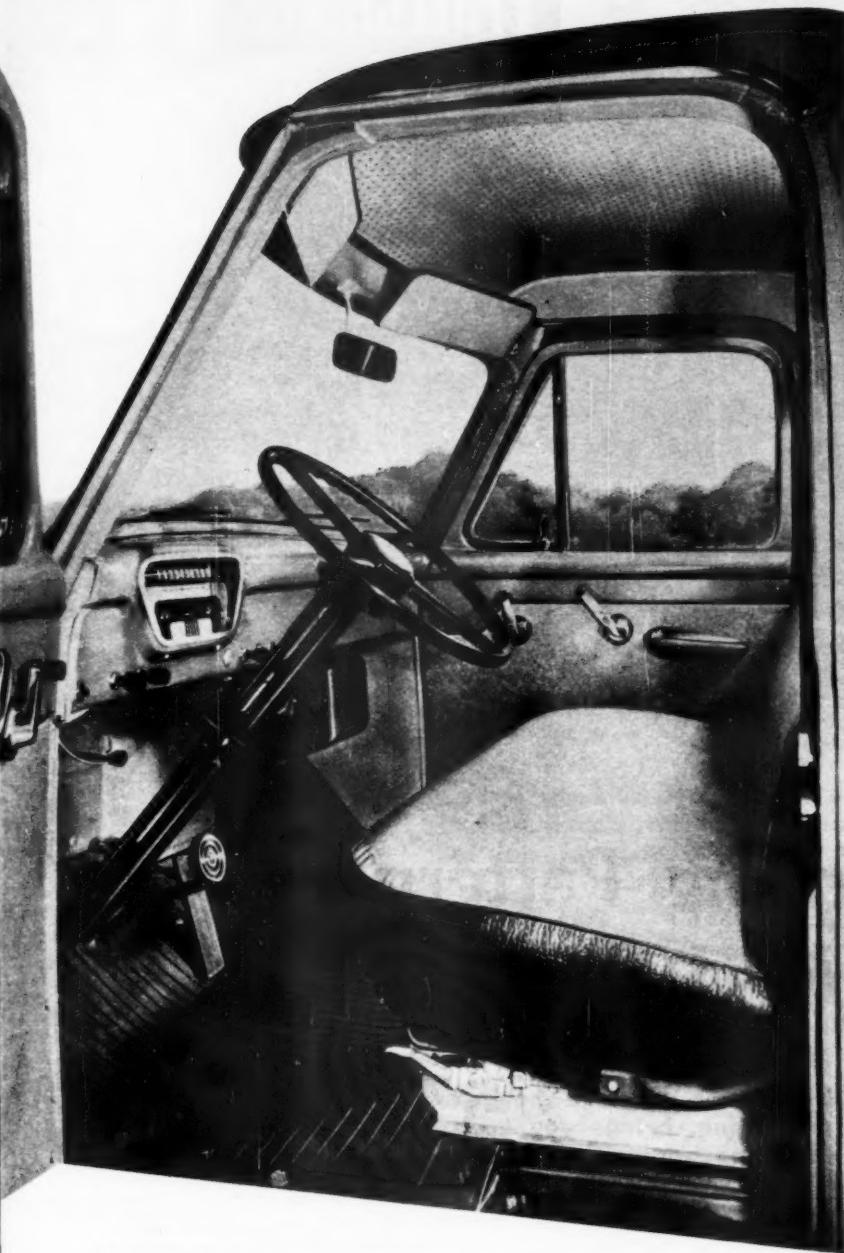
er fatigue. It is just one of many new time-saving features in '53 Ford Trucks, all at the same low price.

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Here at last is a truck cab big enough to let a fellow get his size 12's into and out of without breaking his neck.

For visibility as well as roominess, the new Ford DRIVERIZED cab has no equal. The curved, one-piece windshield offers more glass area than any of 5 other leading truck makes. Back window is over 4 ft. wide.

Seats are something special, too! No other truck seat offers a combination of such features as the new seat shock snubber—new non-

sag springs—and independently adjustable back-rest. For added luxury, a foam-rubber cushion is one of 16 additional custom features available at slight extra cost in the DRIVERIZED DELUXE cab shown above.

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Say goodbye to that "squeezed-in" feeling when you ride in a Ford DRIVERIZED cab. It offers more hip-room than any of 5 other leading trucks.



Something new in seat comfort! Exclusive Ford seat snubber acts as a "shock absorber" for the seat. New non-sag springs replace old-type coils.



Nothing's too good for the Ford DRIVERIZED cab even in hardware details like the new push-button door handles and rotor-type door latches.



Look at side window depth! New Ford window sills are low enough to be used as arm rests. How's that for relaxed DRIVERIZED riding comfort!

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SAVE TIME! SAVE MONEY! LAST LONGER!

The Changing Pattern in PREPACKAGING

By DONALD R. STOKES

The author, who is in charge of USDA research in fruit packaging, brings you up-to-date on developments in prepackaging apples, peaches, cherries, grapes

STEADY but rather slow progress in the prepackaging of fresh fruits continues despite many unsolved problems. The steady growth in the development of prepackaging of fruits is evidence of continuing successful commercial experiences of fruit growers and distributors who are packaging fruits in consumer-size containers.

On the other hand, the relatively slow rate of growth in fruit prepackaging is also evidence of the importance of many problems still unsolved. An illustration of this point can be found in the apple industry. Only a few years ago the USDA experimented with the prepackaging of Washington state apples in film bags. Although some Washington state apples

are now being prepackaged, it is generally conceded that the prepackaging of apples has not gained any sizable foothold in the Northwest, except for the "school-boy" size apples.

However, the results learned from the research studies undertaken in the West and in other areas on apple prepackaging have been widely adopted and applied in other sections of the country. Eastern apples prepackaged in three-, four-, five-, and six-pound mesh and film bags are commonly found in retail food stores.

Grape prepackaging made some forward strides during the last year. The United Fresh Fruit and Vegetable Association, the National Flexible Packaging Association, and the

USDA undertook a research project on prepackaging of Thompson Seedless grapes in retail stores during the 1952 season. The experiments were undertaken in a number of cities scattered across the country, and surprisingly uniform results were found.

Almost unanimously, retailers found that grape sales could be increased if they were offered in transparent film bags along with the usual bulk display. However, many store customers are still skeptical of buying perishable fresh fruit in closed packages, and consequently it was found desirable in many stores to leave the bags open.

The grapes were packaged on a catch-weight basis which offered the
(Continued on page 18)



The new way of merchandising apples in six-pound polyethylene bags and bulk displays sells 28 pounds per 100 shoppers.

The BIG SIX Did It!

**Do you want to double your apple sales?
The six-pound transparent bag will do
the job for you at a handsome profit**

By M. E. BRUNK and B. A. DOMINICK, Jr.

Cornell University

SINCE 1950 the selling of apples in retail supermarkets has changed from a system in which the shoppers had to do most of the work to one where the apples sell themselves. We think "the big six" did it.

Before 1950 apples were usually sold in bulk displays. The customer or the clerk, or both, selected the fruit, and then the clerk had to weigh and package it and figure out the price while the customer waited.

When you go into the more progressive supermarkets today, you still find the bulk displays, but there are packages of apples on top, marked with the price, all ready for the customer to carry to the cash register. This saves time for the customer and the clerk. It also increases apple sales, because the customer who is in a hurry will pick up a bag of apples and add it to her groceries when she wouldn't otherwise take the time to choose them and wait to have them packaged and weighed.

The change in apple merchandising is based on the results of a Cornell study made in the fall of 1950. Sixteen different ways of merchandising apples were tested over a 12-week

period in stores located in western New York. During this time 86,000 shoppers were observed and their actions recorded. Many of the selling methods were tested several times during the study. The winning method each time was a display of bulk apples topped with six-pound polyethylene packages of apples. The price was quoted in six-pound units.

The more progressive growers

picked the results up immediately, and in 1951 many of them packaged apples on their farms, using orange crates as master containers. Snow apples are not especially popular, but one grower reported that he was able to move his entire crop in this manner.

To go on with the merchandising tests, the six-pound package produced
(Continued on page 19)



The old-fashioned way of selling apples in bulk displays sold 12 pounds per 100 shoppers, less than half sold under modern methods.

LOUISIANA PACKS RIPE PEACHES In Cardboard Containers

Growers get premium prices for firm ripe and tree ripe fruit harvested in half bushel cardboard field boxes and packed in 96-cell cardboard shipping container

By P. L. HAWTHORNE

Louisiana Agricultural Experiment Station

A CONTAINER suitable for carrying Her Highness, "The Peach," queen of fruits, to market has been the problem of the industry for many years. The peach is not at best either in appearance or flavor unless it is allowed to remain on the tree until fully firm ripe or tree ripe. At this stage of maturity the peach is so easy to bruise that special care is required in delivering the fruits from the tree to the dinner tables of millions of American families.

Fruit bruising and reduction of quality begin with the harvesting operation and continue on through all phases of the packing, marketing, merchandising, and consumer handling of the peaches. The good peach grower is primarily interested in producing and marketing the product that will bring him the highest income. He knows that a good product packed in the proper container will be a quality product when it reaches the market.

The Louisiana peach growers knew the market was paying a premium for riper fruits. They also realized that lack of containers for harvesting and marketing a more mature peach was a major obstacle in the way of a ripe peach industry.

To find a container suitable for orchard harvesting was one of the first problems to confront the industry. Bruise counts were made on fruits harvested in the regular fruit harvesting bucket, the canvas bag, the lined and unlined one-half bushel basket, the lined and unlined one-half

Spartan box, and the one-half bushel heavy cardboard box. The growers found that the heavy cardboard box gave them an approach to the ideal picking container.

This container can be used with shoulder straps for harvesting convenience, and fruits are transported into the packing shed in this same box. The water repellent cardboard is not materially weakened by light rains. The box can be easily nested into sets of three for returning to the field, and fruit losses from bruises were materially reduced. This container has proved so versatile that more than 85 per cent of the 1953 Louisiana peach crop will be harvested in cardboard field boxes.

Studies on a suitable container for packing and shipping fruits have been in progress for a number of years. During this period the Louisiana peach growers have had an opportunity to examine the qualities of 22 different containers and sizes of containers. They found that all containers similar in design to the bushel tub or the Spartan box permitted fruits to touch or press against each other, causing an excessive amount of fruit bruising or skin damage and fruit rots to riper peaches.

These containers may be good for green ripe peaches, but the Louisiana growers were interested in developing and maintaining a ripe peach industry, so they were in search of a suitable container in which to pack their high quality product. Their markets had clearly shown that a



premium price of six or eight cents per pound was possible if they could deliver a ripe peach to market.

The tenderness of flesh of the peach required that a container be so designed that each fruit be placed in an individual compartment. The Louisiana cell peach box (similar to an egg crate) was developed from the cell container which had been tried and discarded by growers in other states. The suitability of the Louisiana cell box has been proved by acceptance of the box by growers.



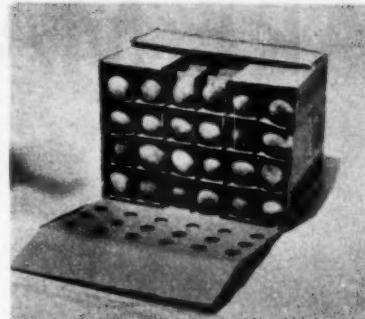
wholesalers, and retailers in the area.

This container is assembled with water repellent glue which prevents the box from softening under normal damp, cold, storage conditions. The popular 96-cell size is used to pack fruits $2\frac{1}{2}$ to $2\frac{3}{4}$ inches in diameter. In this container the individual cell size is $2\frac{5}{8} \times 2\frac{5}{8} \times 2\frac{7}{8}$ inches high. The added cell height prevents damage to fruits that are slightly elongated. This size container is ventilated on each side with 18 round apertures $1\frac{1}{4}$ inches in diameter.

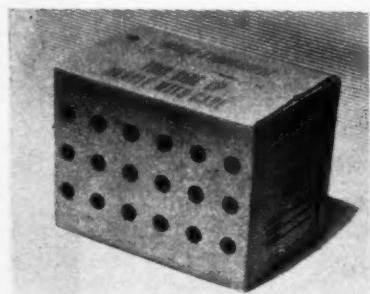
These apertures, or holes, are so located as to give maximum ventilation and fruit cooling.

The interior of the cell walls of the container is so arranged as to permit free movement of air throughout the box. Fruit cooling studies show that pit temperatures can be reduced from 77°F . to below 50°F . in about four hours when the packed fruits are stored in 40°F . forced air storage.

At present three sizes of the Louisiana cell box are in common use. The 120-cell size is used for packing



Each of 96 peaches is nestled in a cell in this cardboard container. Louisiana growers are using extensively this year to insure bruise-free fruit for market.



Sealed 96-cell box. Holes on either side permit ventilation and cooling of fruit.



Wirebound peach box shows promise of becoming an excellent shipping container.



Three-layer wirebound box. This type of container lends itself to counter display.

$2\frac{1}{4}$ to $2\frac{1}{2}$ -inch fruits. The 96-cell size described above and the 80-cell size are used for fruit $2\frac{3}{4}$ to 3 inches in diameter. The cells are one-fourth inch higher than the diameter for each cell size.

Fruits below $2\frac{1}{4}$ inches in diameter are packed in bushel tubs and should not enter the premium market channels.

Tests have shown that the California peach lug permits excessive bruising to fruits in the bottom layer. This high rate of fruit bruising plus the slow rate of fruit cooling for this container reduced its acceptance by Louisiana growers.

The Louisiana wirebound peach box, designed and used experimentally for the first time in 1952, may prove to be superior to all other containers tried to date. Three points in favor of this type of container are:

- 1) The packed fruit can be liquid or air precooled before shipping.

- 2) It offers excellent protection against bruising of fruit.

- 3) The box can be used as a counter display container.

Experimental shipments of fruits in this container were favored by the wholesale and retail trade over other containers used in the test.

The Louisiana wirebound peach box will be used in Louisiana on expanded trials in 1953. It is suggested for limited trial use only at present.

Louisiana peach growers have found by experience that all phases of orchard management and fruit marketing are important in a ripe peach industry, but more money can be made and fewer bruised fruits are marketed if they use the proper container in the harvesting and marketing of their fruit.

THE END

ARE MARKETING AGREEMENTS

Secretary of Agriculture Ezra Taft Benson believes in self-help programs to overcome farm marketing problems. In a special statement to fruit growers Mr. Benson says that marketing agreement programs encourage growers to be independent and to help themselves and are in direct opposition to bureaucracy and government controls.—Ed.

By EZRA TAFT BENSON



I WAS pleased when the editor of AMERICAN FRUIT GROWER asked me to write a short statement concerning the use I feel growers should make of marketing agreement programs in marketing fruit crops. This gave me a chance to write about self-help for farmers in solving their own marketing problems.

The quantity—and even quality—of a particular crop of fruit is dependent to a large extent on the weather during the growing season. Trees are generally long-lived and many years are required to bring them into full bearing. Most orchards represent large investments. It is not feasible for fruit growers to adjust acreages year by year as can be done by growers of annual crops.

A grower cannot afford to pull out an orchard which is in full bearing because prices are unfavorable in a particular year. Neither can he reduce by any considerable amount the money spent on an orchard during a particular year because prices are low. Growers must continue to care for their orchards since neglect would damage the trees and impair the chances of obtaining satisfactory crops the following year.

It is apparent, then, that the supply of a fruit crop cannot readily be adjusted from year to year to meet changes in demand. Even if consumers' wants were constant the fruit

supply could not be adjusted precisely to fit them.

A fruit tree that produced a crop that was just right under favorable weather conditions would produce a crop that was woefully short if weather conditions were unfavorable. Similarly, tree numbers which would produce sufficient fruit to satisfy consumers at moderate prices when the weather was bad would produce an excessive crop and burdensome surpluses when the weather was right.

Consequently, surpluses are quite frequent in years when growing conditions are favorable. Although some fruit is carried over from one year to the next in the canned, frozen, and dried state, it is not practical to carry over much volume in this way because the crop next year may be large, too.

In view of this situation, fruit growers need a device to help tailor supply to demand in any particular year. A marketing agreement program is such a device. These programs have many features which recommend them to fruit growers who are looking for a way to help themselves in co-operation with the USDA. Some of these features are:

1) Marketing agreements and orders provide for a large degree of industry participation in their development and operation with only that minimum of governmental control which is necessary to protect the in-

terests of individuals and the general public.

2) Program operations are financed by the interested industry and a minimum of public funds is spent in developing and supervising them.

3) They are permissive and are undertaken only if an industry wants them.

4) A marketing order for fruit is generally operated so as to encourage the marketing of the better quality and size fruit. This means not only that consumers obtain better buys but also that growers strive to grow better fruit to meet order restrictions.

Marketing agreement programs have been used more by fruit growers distant from the principal consuming centers of this country than by those near large markets. The distant growers must incur higher marketing charges, such as freight costs, in placing fruit in retail stores, and fruit must be good enough to sell for a price which will at least cover such costs.

The marketing of inferior quality fruit may not only result in "red ink" prices but will also tend to reduce the demand for fruit.

The USDA encourages farmers to be independent and to help themselves. One way in which fruit growers can do this is by making greater use of marketing agreement programs.

THE END

ENTS AN *Answer* TO LOW PRICES?

Here is the experience of California growers who joined together in a statewide marketing program which more than doubled returns to growers and is strengthening California's competitive position against other commercial peach growing states.—Ed.

By H. W. VAN GELDER

THE California Fresh Peach Marketing Order represents an agricultural economic effect. The details and provisions of the Marketing Order have been analyzed and discussed from time to time in all of their various aspects. On the other hand, the causes and the reasons for this Marketing Order have been referred to in generalities only that leave a rather incomplete picture in the minds of those who might have wondered what circumstances lay behind its formulation.

While California raises far more peaches than any other state in the Union, the larger part of that volume is represented by clingstone peaches of which almost 100 per cent are canned. The state's status as a producer of fresh freestone peaches is surpassed only by Georgia and South Carolina. From this point on, the producing and marketing characteristics of California and the southeastern states become more diverse.

With respect to the cultural differences that distinguish these two principal growing areas, it is well known that the southeastern states have a summer climate high in humidity which in turn induces the problem of brown rot in much of its produce.

California, on the other hand, enjoys hot, dry summers that are quite suitable to the proper maturity and ripening of the peaches but at the

same time do not encourage the spread of brown rot. California does not have to depend on rainfall to supply moisture for proper fruit maturity. With the exception of the winter rainfall, all of the water that is supplied to the peach trees is completely under the farmer's control by various methods of irrigation.

The point of the foregoing comment is, of course, that California climatic conditions lend themselves to the production of peaches with optimum appearance and eating characteristics when the necessity exists for peaches of this type to be produced. With regard to geographic location and proximity to

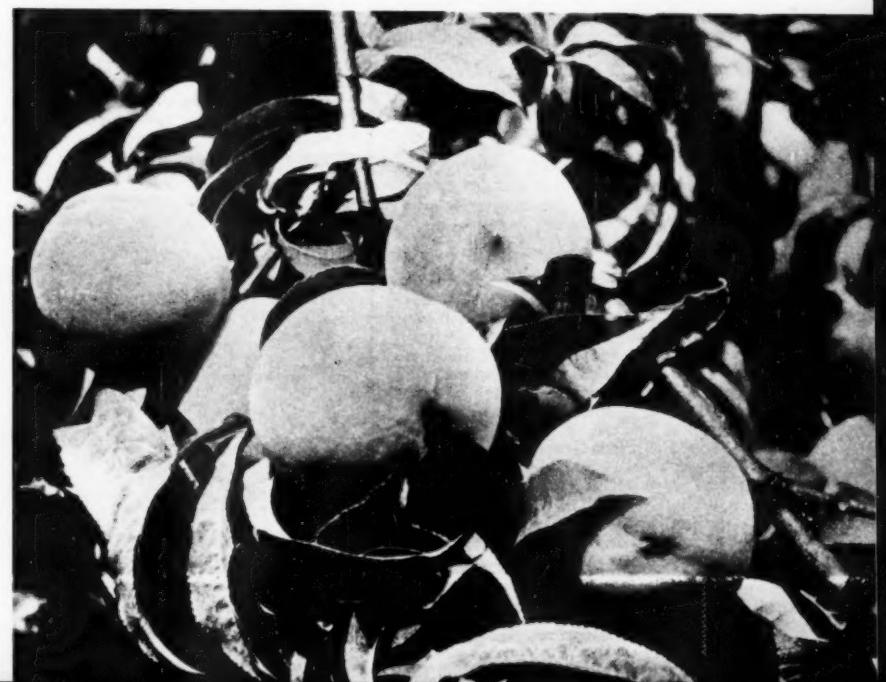
its principal markets, however, California is not nearly so fortunate.

In the early days of fresh peach shipping from California producing areas to eastern markets, there was no regulation of any kind on the quality of the fruit thus shipped. This combination resulted in a deficit marketing situation that threatened disastrous results to the fresh peach industry of California since a market already depressed by sub-standard peaches had in addition to this to absorb the cost of a 3,000-mile transportation charge.

Eventually the industry decided that the situation was chronic and would not alleviate itself without the application of some drastic remedy. They then cast about to find some device which might bring relief to the situation and bring the factors of quality production and remote markets into a condition of more profitable correlation.

This was not done until 1939 when the industry availed itself of the Federal Agricultural Marketing Agreement Act of 1937 as amended which included provisions for the regulation of quality, size, and maturity for those peaches moving in the channels of interstate commerce.

(Continued on page 20)



The author, H. W. VAN GELDER, is manager of the California Fresh Peach Advisory Board and the California Fresh Plum Advisory Board, in Fresno, which administer the quality control programs.

AUGUST, 1953

State



NEWS

- N.Y. and N.E. Growers Vote Record Sales Promotion
- Florida Worried About Re-Entry of Japanese Citrus Canker

NEW YORK—What all growers agreed was the most successful meeting in the history of the New York & New England Apple Institute was held at the Morello Bros. cold storage at New Paltz, N. Y., July 15. More than 350 growers and tradesmen attended the meeting and showed active interest in an aggressive program to promote the sale of apples.

According to Secretary Monte Marvin the board of directors voted the largest budget in the history of the institute by approving a \$100,000 appropriation, of which \$70,000 is earmarked for consumer advertising over radio and television and in support of the national promotional program approved by delegates to the National Apple Institute meeting at Roanoke in June.

The New York & New England Apple Institute receives its income from a voluntary assessment of two cents a box. The assessment was increased from one cent to two cents a box a year ago.

Besides discussing promotional plans growers heard an interesting discussion of the many nutritional and health values of the apple by Dr. V. D. DeWitt of New Paltz, former president of the Ulster County Medical Society. He urged growers to carry on an aggressive program based on scientific facts directed to doctors, dentists, and consumers.

W. I. Blair of the Agricultural Statistics Bureau of New York gave a preliminary report on the Hudson Valley Fruit Tree Survey. He said that about 10 per cent of the apple trees have been removed and in addition 7,238 acres have gone out of production.

There was considerable interest in modified atmosphere storage as discussed by Dr. R. M. Smock of Cornell. He advocates a scientific study of costs. It was reported that one grower received on the average over a four-year period a premium of \$1 a box for modified storage apples. Last season in the Hudson Valley nearly 250,000 boxes of McIntosh were put in modified storage.

At the meeting the apple crop "guess-timate" for the seven states making up the New York and New England area was reduced by 500,000 boxes because of a heavier than expected June drop.

GEORGIA—The peach harvest is nearly complete at Fort Valley (July 15). It has been a very successful season for the growers of the south Georgia peach section. Prices have been good. In middle Georgia the Elberta harvest is just beginning. In the north Georgia peach section the Elberta crop will begin to move about July 24. A good crop of fruit is in prospect for both the middle and north Georgia sections.

Peach scab under the old lead arsenate program was seldom found in Georgia peach orchards. With the widespread use of parathion and sulfur sprays, scab became almost overnight one of the important peach diseases. Dr. G. E. KenKnight, pathologist at the USDA Horticultural

Field Laboratory at Fort Valley, has obtained excellent control of scab with lime applications at about the time of the second and third cover sprays. This poses a problem, but not an unsurmountable one, since parathion and lime are not compatible. It may necessitate special lime sprays three to four days after the regular parathion applications.

There does not seem to be as much of the Phoney peach virus disease as in previous years.—*Earl F. Savage, Hort., Experiment.*

FLORIDA—"The best crop in yield and quality that we've ever had in Palm Beach County," is what County Agent M. U. Mounts says about the 1953 mango season. It is expected that this year's mango crop will exceed the 42,000 bushels produced for market last year.

Florida citrus trees are looking their best in two years, and the July estimate for the 1953-54 citrus crop is around 115 million boxes. This indicates a four million-box increase over last year's crop.

Dread of reintroducing Japanese citrus canker to Florida groves has caused the Florida Tangerine Co-operative to urge the Florida Citrus Commission to help prevent re-entry of the disease into the U.S.

This action was spurred by the recent commitment of the State Department to investigate whether or not the disease still exists in Japan, for Seattle importers are interested in bringing Japanese citrus into this country.

The tangerine co-op now wants to send its own specialist to Japan to make its own independent survey. They say that the disease was found on Japanese oranges aboard a ship at the port of Tampa within the last year.

Citrus rootstock research, iron and copper in nutrition, spray programs, secondary nutrients, limes, tangelos, and citrus by-products are among topics to be discussed at the 20th annual Citrus Growers Institute to be held at Camp McQuarrie August 17-21. Top-flight scientists will speak, according to Citriculturist Fred P. Lawrence of (Continued on page 14)

FRUIT PEST HANDBOOK

(TWENTY-FIFTH OF A SERIES)

PEACH SCAB

THE development of numerous, brown, freckle-like spots on peaches is the result of earlier infections by the fungus *Cladosporium carpophilum*. This fungus, causing the peach disease called scab, attacks peaches everywhere they are grown except in arid sections. It affects the fruit, twigs, and occasionally the leaves, but economically is of importance only on the fruit.

Scab spots appear on the fruit first as pale green circular spots, generally most numerous at the stem end, but frequently scattered over the peach. These spots

become visible about 60 days after the blossom petals have dropped and as they slowly enlarge the color changes to dark brown or almost black.

Scattered infections mar the appearance of the fruit but otherwise do little damage. Numerous infections, however, frequently coalesce, forming a dark crust-like growth that interferes with the normal swelling of the peach and causes it to crack as it ripens. Badly infected fruit is small and worthless and is readily infected by the brown rot fungus.

(Continued on page 20)



Scab-infected fruits have spotted, dark areas, as shown on these peaches.



SALINITY *in* WESTERN IRRIGATED SOILS

Because so many fruit trees are salt sensitive this authoritative article points the way for the grower to learn how to cope with this important soil problem

By H. E. HAYWARD

ALL soils contain salts, and some of them are essential in plant nutrition. The amount of salts present in agricultural soils in the East is low because there is sufficient rainfall to leach excess salt from the root zone. But in arid and semiarid areas in the western states where there is too little rain for successful farming and land must be irrigated, soluble salts tend to accumulate in the soil in amounts that are harmful to crop production.

A soil may be saline because of its origin and formation from parent materials high in soluble salts; but in many cases soils that are originally only slightly salty become highly saline because the input of salt exceeds the output. The development of such an unfavorable salt balance may result from the use of irrigation water with a high salt content, inadequate irrigation, or poor drainage.

If the concentration of salt is too high, seed germination is reduced and

seedling plants may die. Many stone fruits, avocado, and grapefruit exhibit symptoms of salinity injury such as tipburn and firing of the margin of leaves and the dieback of branches. In other cases there may be no specific symptoms that are detectable, but the plants may be stunted and produce low yields.

The presence of appreciable quantities of soluble salts in soils frequently decreases plant growth because water absorption by plants is made progressively more difficult as the concentration of dissolved materials in the soil water increases. This concentration effect, measured as osmotic pressure of the soil solution, usually is more important in influencing plant growth than the kinds of salts involved.

Since water is essential for plant growth, it is important to prevent saline soils from becoming too dry during the active growing period of a plant, because as the soil dries and moisture is removed from the root zone, the osmotic pressure of the soil solution increases and the absorption

of water by the root system is reduced.

In addition to growth depression resulting from osmotic pressure, it has been found that there may be injury due to the poisonous effect of certain elements of the dissolved salts. The most common salts found in the soil solution consist of various proportions of the cations sodium, calcium, and magnesium, and the anions chloride, sulfate, and bicarbonate.

A number of tree and vine crops show specific toxicity to chloride. Among these are peaches and other stone fruits, pecan, citrus, avocados, and grapes. Almonds show tipburn and avocados develop leaf scorch if too much sodium is accumulated by the tree, and this ion may exert secondary effects through adverse modifications in the structure of the soil which are referred to later.

Plants differ with respect to salt tolerance which in one sense refers to the ability of plants to survive on saline soils. Another measure of salt tolerance may be based on the yield of the crop on saline soils; but the

The author, H. E. HAYWARD, is director of the U. S. Salinity Laboratory, Riverside, Calif.

best basis for compiling a list of salt tolerant plants is to appraise the relative yield of a given crop on a saline soil as compared to its yield on a nonsaline soil under similar growing conditions.

The U. S. Salinity Laboratory has investigated the salt tolerance of a large number of field, forage, fruit, and vegetable crops, listing those in each major division in three classifications—high, medium, and low salt tolerance. Within each classification the crops are listed in the order of decreasing salt tolerance but a difference of two or three places may not be significant. The rating for fruits as given in the manual "Diagnosis and Improvement of Saline and Alkali Soils" is as follows:

High Salt Tolerance—Date palm.

Medium Salt Tolerance—Pomegranate, fig, olive, grape, cantaloupe.

Low Salt Tolerance—Pear, apple, orange, grapefruit, prune, plum, almond, apricot, peach, strawberry, lemon, avocado.

It is evident from this classification that a large proportion of the fruit crops grown under irrigation in the western states are sensitive to relatively low levels of salinity. This is not true of the other major groups where there may be several species that exhibit high salt tolerance, and the largest number have at least medium salt tolerance. For example, in the vegetable group, of 20 species tested, 4 are high, 13 medium, and 3 low in salt tolerance; and of 14 field crops, 4 are high, 9 medium, and 1 low in relative tolerance.

Because so many fruit trees are salt sensitive, the control of salinity is a critical consideration to western fruit growers. If salinity is suspected, it is desirable to obtain information on the following points: 1) amount of soluble salt in the soil profile; 2) quality of the water used for irrigation; and 3) depth to the water table and the possibility of drainage. A determination of the sodium status of the soil will give an indication of the occurrence of alkali conditions.

The amount of salt in the soil will determine the need for leaching to remove excess salts from the root zone. This determination can be made by most commercial laboratories and several of the western states have analytical facilities that are available through their experiment stations and extension services. There are several methods of measuring the salt content of a soil, but the one most commonly used measures the electrical conductivity of the saturated soil extract obtained from representative soil samples.

This electrical conductivity method can be made quickly and accurately and gives values, usually expressed

in millimhos per centimeter at 25° C., which can be related directly to an appraisal of soil salinity on plant growth. In general, salinity effects are negligible if the value is less than 2 millimhos/cm., the yields of sensitive crops may be restricted at values between 2 and 4, yields of many crops are restricted in the range 4 to 8, only salt tolerant crops yield satisfactorily at values of 8 to 16, and only very tolerant crops yield satisfactorily above that value.

Quality of Irrigation Water

The characteristics which are of major importance in determining the quality of an irrigation water are: 1) total concentration of soluble salts; 2) relative proportion of sodium to calcium, magnesium, and potassium; 3) concentration of boron or other elements that may be toxic.

In some cases the bicarbonate concentration as related to concentration of calcium plus magnesium should be known. As with the soil extract, the salt content of irrigation water is usually measured by electrical conductivity but is expressed in micromhos per centimeter. These units can be readily converted to parts per million or tons per acre foot if desired.

In general, waters having values below 750 micromhos/cm. are satisfactory for irrigation insofar as salt is concerned, except for the most salt-sensitive crops; waters in the range 750 to 2,500 micromhos/cm. are used with satisfactory results for most crops provided there is favorable drainage and good management practices are observed. However, saline conditions will develop if leaching and drainage are inadequate. Waters with conductivity values above 2,500 micromhos/cm. are seldom used successfully.

Boron occurs in nearly all natural waters in concentrations varying from traces to several parts per million and is very toxic to sensitive plants in amounts only slightly above optimum values. Most of the fruit crops grown under irrigation are sensitive to boron with the exception of the date palm and olive. Citrus varieties, especially lemons, and avocados are very sensitive and the stone fruits are only slightly less so.

If the boron content of irrigation water exceeds 1 to 1.25 p.p.m., it is probably unsuitable for sensitive crops; semitolerant crops may grow satisfactorily if the boron content does not exceed 2 to 2.5 p.p.m.; and only the most tolerant crops can be grown at values in excess of 2.5 p.p.m.

In considering the salinity status of soils and the quality of water for irrigation, it should be emphasized that the soil type, its physical characteristics, and such factors as drainage and

management practices need to be taken into account. For example, if the soil is coarse-textured and readily permeable, water of less desirable quality may be used if enough is applied to provide adequate leaching.

If the soil salinity and quality of water values are higher than permissible or safe limits, sufficient water should be applied in excess of the crop requirement and losses due to evaporation to permit adequate leaching and to prevent the development of an unfavorable salt balance.

This means that there must be good drainage so that excess soluble salts are moved out of the root zone without the development of a high water table. The success of the leaching operations can be determined by subsequent tests of the soil.

Alkali Soils

The foregoing discussion has been limited to saline soils, that is, those soils containing sufficient soluble salts to impair productivity. The problem of alkali soils and the sodium hazard is more complicated than the salinity problem and space does not permit a full discussion of it here.

However, it should be noted that some western soils are classed as alkali soils, that is, those containing sufficient exchangeable sodium to interfere with the growth of most crop plants. Such soils may or may not contain appreciable quantities of soluble salts; but, if they do, they are called saline-alkali soils.

If soluble salts are low, the soils are termed nonsaline-alkali soils. Such soils are characterized by high exchangeable sodium, the pH readings usually range from 8.5 to 10 and the soils are dispersed forming irregular areas often referred to as "slick spots" which are usually very impermeable to water.

Because the saline-alkali and alkali soil conditions are frequently encountered in the western states, it is recommended that determinations of exchangeable sodium be made on the soil extracts and of per cent sodium on irrigation waters. If the exchangeable-sodium-percentage exceeds 15, and the conductivity of the soil extract is low, leaching will not be effective, and the use of soil amendments such as gypsum is indicated.

If the irrigation water contains excessive amounts of soluble sodium, its use may produce harmful levels of exchangeable sodium unless the soil is high in gypsum. Furthermore, the use of a low-salt, high-sodium water on a saline or saline-alkali soil may ultimately produce an alkali condition with unfavorable characteristics for plant growth—poor structure, low permeability, poor aeration, and toxic levels of sodium.

THE END

THE Leaves

WILL TELL YOU

Washington growers are getting excellent tree growth response by fertilizing according to leaf and subsoil analyses

By JACK R. WHITNALL

WHAT'S your trouble Mr. Grower? Are you surface fertilizing, yet still not getting any results?

A. M. Bosancon, Wapato, Wash., fruit grower, was having trouble with his peaches. A small area in a five-acre tract was showing yellow leaves during the spring growing season of 1952. The condition was quite general over all the trees involved.

Sterl E. Bowers, Wapato, was having trouble with his apples. Twenty acres were low in production, poor in size and showed poor growth.

Henry Lombard, also of Wapato, was finding exceedingly poor growth in his block of pears.

The three problems above were thrown into the laps of Carl Hopkins and Ken Remaley, soil chemists for the Yakima Valley Spray Company soil analysis laboratory.

The Yakima Valley Spray Company lab has been in operation since 1937. During those years they have been handed many tricky problems by growers who have had poor results in one form or another—poor color in apples, poor growth of pear trees, poor foliage, hard-end pears, soft fruit, poor keeping qualities, and dozens of other symptoms that could possibly be associated with poor diet of the trees involved.

For years the fertilizing program has been based upon a surface analysis of the soil in the orchard involved. The shovel slice of soil was taken from the top foot of ground, or topsoil, and the analysis for nitrogen, phosphorus, potash, calcium, magnesium, sulfur, and iron was made from the mixed samples. Available elements per hundred pounds per acre were also given, and the fertilizer applications were based on these readings. An organic matter test and a pH reading were also taken and were considered when fertilizer was recommended.

But over a period of years, too many readings and consequent fertilizing programs had shown a marked lack of response, or too slow a response. The soil chemists suspected



Three-year-old Golden Delicious growing in same orchard about 100 feet apart. Above tree, planted where large pile of brush had been burned, is 12 feet high, bore one and one-half boxes of apples last fall. Four times as much potash and twice as much phosphorus, apparently deposited from ashes of burned brush, were available in second foot of soil in which this tree is growing as compared with subsoil in which the tree to the left, which is about half as tall, is growing.

that their fertilizers, placed on top of the soil, were not getting into the subsoil, where they figured that 75 per cent of the feeder root system of a tree is located.

The above three cases were handled with analyses made in three different places. First, available nutrient analyses were made of the topsoil and the subsoil, and the third analysis was made of the leaves of trees suffering from malnutrition and also of those in apparent good health.

The leaf analysis was a quantitative

one, showing the entire amount of element in the leaf, as opposed to a nutrient analysis, or available form analysis, of the elements in the ground.

The results of the three analyses on Bowers' apple orchard indicated that the available nutrients in the subsoil and the elements in the leaf were remarkably close on readings—both subsoil and leaf showed a lack of potash.

Hopkins and Remaley recommended an application, therefore, of 300

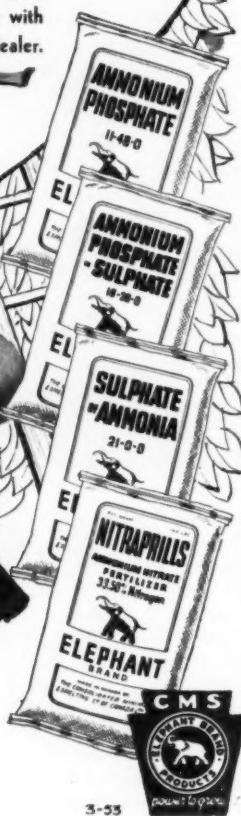
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pounds of potash to the acre in a surface application and a potholing of five pounds of potash to the tree, applied in 10 holes around each tree, as the start of the correction cure. This year, Bowers reports that his trees are showing an exceptional growth, good size, and apparent excellent health.

Too Much Alkalinity

Bosancon's peach trees were a different problem, but they were handled similarly. Available nutrient analyses were made of the top soil and the subsoil both in that area of the orchard where there were yellow leaves and in that area where leaves were normal. In addition, quantitative analyses were made of the leaves in both the good section of orchard and the poor.

The analyses showed that there apparently was plenty of iron in the soil, but only traces of iron in the leaves, and that the calcium was exceedingly high, as was the pH reading of 8.1 in the subsoil. Hopkins deduced that the yellow leaves were caused by a calcium-induced chlorosis. The condition was cured by the addition of iron sulphate, which had two purposes: 1) to increase the available iron, and 2) to decrease the alkalinity.

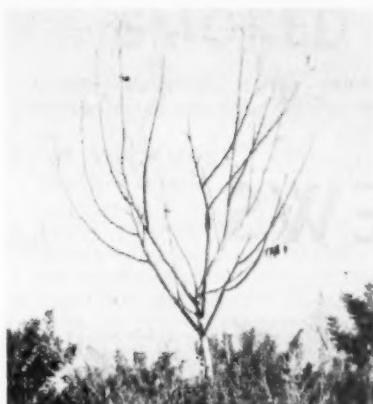
The Lombard orchard indicated an exceptionally low quantity of potash in the subsoil, but normal amounts in the surface soil.

Hopkins again called for potash applications in potholes around the tree, but potholing is an arduous method of planting fertilizer, so Lombard instead made exceptionally heavy applications of potash to the surface. This year the growth on the tree is phenomenal—sturdy, long, new growth.

What does it mean?

"I think we're on the track of an important development in fertilizing," was Hopkins' comment. "For years it has been preached that the surface feeder root was the only place a tree could obtain food, but there has been too much coincidence between our subsoil analyses and our leaf analyses to uphold this. In fact, in some cases there is a direct correlation between subsoil and leaf analyses." THE END

A reader writes, "Nowhere other than in AMERICAN FRUIT GROWER can I find advertised such a wonderful variety of equipment and products that the grower needs." Read the advertisements and remember advertisers will be glad to send you catalogs, specifications, and prices. Be sure to say you saw it in AMERICAN FRUIT GROWER.



Mr. Red-hump did this. New broods of caterpillars will eat off new growth when it appears again on this tree.

MOST of the walnut and prune growers in northern California know this small insect. He not only defoliates trees in midsummer, but he causes them to break into bloom by October.

The overwintering stage of the red-humped caterpillar is in the form of the fullgrown larva in a cocoon, or pupa, which pupates early (in California, from May to early June).

The insect emerges as a reddish-brown or gray moth, which measures about two inches across. The moth lays its pearly-white, spherical eggs in large masses on the leaf surface in early spring. These egg masses contain from 25 to 100 eggs.

The young caterpillars hatch from the eggs, feed first on a single leaf, and only on the surface of the leaf. As the caterpillars mature they begin to skeletonize the leaf and leave only the mid-rib and veins.

During their gregarious-type feeding, which is generally on the terminals of the new growth, they may completely strip all the leaves from the terminal, and then all the insects will migrate to another part of the tree. The caterpillars become full-grown in about three weeks, when they spin their cocoons on the ground.

Five Generations

There are five generations in northern California. In general, over the U.S. and Canada, there are three. Possibly the second and third broods in California are the most important, more of them usually appearing during the summer.

These broods may strip the foliage from apple, apricot, English walnut, black walnut, persimmon, blackberry, huckleberry, pear, plum, and prune trees.

How important is this insect that has such a wide host range and causes

The author, ROBERT M. HOFFMAN, is farm advisor at the University of California Farm and Home Advisors Office, Red Bluff.

Meet Mr. Red-Humped Caterpillar

By ROBERT M. HOFFMAN

Here is an insect that can completely defoliate a fruit tree in midsummer and force it to bloom a second time in October. Warm California winters act as warning!

defoliation in midsummer? At present growers of deciduous fruits in California have not become too alarmed about the stripping of leaves from their fruit crops.

Control is simple and cheap and may be had by using many of the organic insecticides including parathion, DDT, toxaphene, Chlordane, and Lindane. Lead arsenate and Cryolite, the old standby controls, are still equally as good.

It is the feeling of the writer that growers of young trees named as host



These 10-day-old insects systematically devour English walnut leaves. In this caterpillar stage they feed gregariously.

plants should be constantly on guard against this heavy feeder. At present controls for red spider and peach twig borer are included in the grower's spray program. In years of warm winters, controls for the red-humped caterpillar also should be included.

There seems to be a direct correlation between winter temperatures and the red-humped population that overwinters and emerges in the spring. Thus, warm winters should be a warning to alert the grower to the possible danger of Mr. Red-humped Caterpillar.

THE END

Books for Your Orchard Library

1. DESTRUCTIVE AND USEFUL INSECTS by Metcalf, Flint and Metcalf. A completely revised and up-to-date edition of this famous book. Valuable descriptions and photographs of all fruit insects.....\$10.00
2. PRINCIPLES OF WEED CONTROL by Gilbert H. Ahlgren, Glenn C. Klingman, and Dale E. Wolf. Gives practical answers to basic problems of weed control and discusses chemicals used. The book contains 368 pages and is well illustrated. \$5.50
3. DWARF FRUIT TREES by Lawrence Southwick. A complete description of the selection, planting and cultivation of dwarf fruit trees.....\$2.50
4. PLANT DISEASE HANDBOOK by A. Westcott. Well organized book for easy identification of fruit diseases. Alphabetical listing.....\$8.50
5. IRRIGATED SOILS: THEIR FERTILITY AND MANAGEMENT by D. W. Thorne and H. B. Petersen. A well illustrated book which covers such topics as evaluating land for irrigation, irrigation practices for various crops, and drainage in its 288 pages.\$5.00
6. FRUIT SCIENCE by Childers. A fruit grower's bible by a leader in the industry. Fruit growing from A to Z.....\$6.00
7. SMALL FRUIT CULTURE by Shoemaker. The way to profits with berries, brambles and grapes. Every grower should have this book\$4.50
8. REGISTER OF NEW FRUIT AND NUT VARIETIES, 1920-1950 by Reid M. Brooks and H. P. Olmo. Briefly describes 1,106 varieties originating in North America and introduced commercially during the last 30 years. Variety name with synonyms, originator's name and address, date of commercial introduction, plant patent number, parentage, and most valuable characteristics of the variety are included\$3.00

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NEWS AND VIEWS

Die-back in Oregon

Polk County, Ore., pear trees, as well as some other trees in the area, have shown a lot of die-back in new growth during the late spring. H. J. O'Reilly, plant pathologist at Oregon State College, was called to see the orchards affected. He says the same condition has been reported from many sections of the Northwest this spring. He explains the condition is frequently found in trees after winter injury, wet feet, or other types of "not-so-good conditions." The Willamette Valley experienced an unusually wet late spring. The disease did not seem to attack healthy, vigorous trees. It usually hit those which had been damaged by late November's sudden freeze. No spray program is yet known that will effectively eliminate the fungus from weakened trees. The moral is to keep trees as vigorous as possible.

Vigorous trees and a clean orchard are the best insurance against shot-hole borers, which move into healthy wood from sunburned and dead or dying limbs. They can be controlled by keeping the orchard vigorous through fertilization, irrigation and pest control; by removing and burning dead limbs, trees, or brush piles; by cleaning up the orchard promptly in winter; and by preventing orchard sunburn by proper pruning, mechanical protectors, and whitewash, according to C. L. Hemstreet, University of California farm advisor. The beetle's work can be identified by small shot-holes on dead and dying limbs and tiny beads of gum on the live limbs, Hemstreet said.

Strawberry Giants

No one need climb a bean stalk to find giants these days. He can find them on strawberry plants in Cashmere, Wash., where berries measuring more than seven inches in circumference have been grown by experimenters M. B. Pipkin and John Townsend. The huge berries are a hybrid variety, according to Pipkin, but which varieties have been crossed Pipkin is not saying. The new berry is the result of six years of experimentation with cross pollination and fertilizers, and the growers hope to have it patented soon. Pipkin has had trouble stuffing as many as eight of the berries into one box, and then the crates will not stack.

Apples have one up on the dentist—he can fix your teeth after they go bad, but apples can help prevent their going bad in the first place. This was the gist of the talk given by James Robinson, executive secretary of the Southern California Dental Association during the 66th annual convention of the Washington State Dental Association held at Yakima. "Apples do a better job of cleaning the teeth and mouth than a toothbrush does," Robinson declared, and he urged dentists to recommend proper selection of foods for children's oral health.

Hula hula rhythms are making inroads on California strawberry growing—at least they are on the Pearson Brothers' farm in the San Gabriel Valley of southern California. The brothers took over the farm their father started 45 years ago and have fought the high water table problem over the years to develop their 22 acres of strawberries and a few acres of Boysenberries, raspberries, and Loganberries. They sold the fruit at their roadside market. But now the brothers are shifting the emphasis on their farm to growing fancy gourds to be used for band instruments—hula band, that is.

Latest news in the wooden box-vs.-fiberboard carton race is that a survey at Wenatchee and Yakima showed the standard nailed Northwest apple box to be nosing ahead. According to the survey, more than 90 per cent of the 1952 pack was shipped in the nailed box, while only 86.7 per cent was packed in wooden boxes in 1951.

Good Color, Good Sales

It pays to limit the color range in retail lots of apples, according to tests and research conducted recently by the Washington State Apple Commission. Retail market studies of lots of Delicious displayed in controlled color ranges showed that a narrower range in color tends to increase sales, reduces extra handling of the fruit by customers, and reduces customer purchasing time. It was also learned that a display becomes older faster when it includes a wider color range and that sales are reduced by the wider range as the higher colored apples are sorted out of the lot.

Things are looking up for the date and grapefruit growers of Coachella Valley, California, with completion of the All-American irrigation canal now in sight. The contract for the last 11 miles of the canal, near Indio, has been let and work should go forward immediately. Both the Date Growers Association and the grapefruit growers in the California Fruit Growers Association expect considerable expansion of fruit acreages as soon as water is available in this below-sea level hothouse farming area.

Know Your Chemicals

Death and danger may come from agricultural chemicals if the fruit grower does not know what he is using and if he does not handle chemicals properly, warns D. L. Liddle, San Bernardino County Farm Advisor. A four-year-old child died in California after having TEPP (tetraethyl pyrophosphate) spilled on him, and the same chemical has caused death of cattle. The material is highly toxic, and sprays containing it should be used with extreme care and exactly according to directions of the manufacturer.

No state fruit tours in Washington this year! That's the news from John C. Snyder, Pullman, secretary-treasurer of the Washington State Horticultural Association. The association has formerly sponsored annual state-wide tours for growers.

Do you like to keep up on the latest thing in varieties? The Register of New Fruit and Nut Varieties, List 7, has recently been released by the American Society for Horticultural Science and may be had by writing to Reid M. Brooks, University of California, Davis.

"Decent of you, Old Boy," said British John Bull recently as he accepted 75 tons of raisins from Uncle Sam. The fruit was given to Britain by California growers to aid flood sufferers.

Yellow leaf roll has been discovered in 96 orchards and on more than a thousand peach trees in Butte, Placer, Sutter, and Yuba counties in California. The infestation is reported by Bob Pearl, former county farm advisor of Sutter County. The area affected is known as the canned peach bowl.

Going down! That has been the direction of the number of American apple trees since the peak year of 1910. Now there are fewer apple trees than peach trees, as shown by both the 1945 and 1950 censuses. Despite the drop in tree numbers, apple production stays steady which means that the yield per tree has been greatly increased.

SMOKED NUTS

A new, delicious, tangy product holds promise of increasing demand for California walnuts and almonds

By W. V. CRUESS
University of California

MANY of us are fond of smoked meats and fish. Smoked cheese is also popular as a sandwich spread or appetizer. It occurred to us in experiments at the University of California on new methods of utilizing walnuts and almonds that because of their high oil content these nuts might respond favorably to smoking.

Accordingly we spread the shelled, salted nuts on screen trays and exposed them in a closed metal box to a dense smoke from smoldering oak sawdust. The walnut meats absorbed the smoke rapidly and attained a pleasing smoked flavor and aroma after 60 minutes of smoking.

Unblanched raw and blanched (peeled) raw almonds, however, took up the smoke much more slowly. We then blanched the almonds by the usual hot water procedure and cooked them in hot peanut oil at about 300° F. to a light golden-yellow color. After cooling and salting they responded

to smoking very well, acquiring a rich smoked taste and odor in about two hours of exposure to dense oak smoke.

As the chemical compounds of smoke have an anti-rancidifying or antioxidative action on fats and oils, it is probable that the smoked nut meats will keep longer than the untreated ones.

The smoked nuts were preferred by the majority of our "taste panel" (students and faculty members) to the untreated. The new products should be useful for serving during the cocktail hour or as appetizers at dinners and banquets. When ground to a paste the resulting walnut or almond butter makes a very tasty sandwich filling or spread for bread.

Perhaps the smoked nut meats could be developed into important commercial products that would materially widen the market for these two California tree crops.

We believe that they would enjoy a year-around demand in the retail trade rather than merely the usual holiday demand.

THE END

BUILD FOR THE FUTURE

Economy-minded fruit growers who want to improve and expand their orchard operations and build for the future should have the following building plans which AMERICAN FRUIT GROWER is now making available to its readers.

Working drawings showing construction details are included.

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If packing space is at a premium in your orchard, here is the answer

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EXTRA POWER—110 HP.

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HOLT FORK LIFT CUTS HANDLING TIME



**Handling Costs Cut 50%
with New HOLT Fork Lift**

**Unit has 2,000-pound capacity...
10-foot lift...8-degree tilt**

Your tractor becomes an even more valuable part of your equipment — with the addition of the new Holt Fork Lift. This strong, versatile, fast and efficient, low-cost fork lift will save money for both grower and canner or packer.

The Holt Fork Lift can be used where a lift truck cannot. In the field or at the plant it is equally at home...cheaper to operate and maintain.

Adjustable width carbon steel forks handle any size pallet — lift a full 2,000-pound load ten feet. Sturdy, closed channel steel runners stabilize and support the load, tilt up to eight degrees for better balance. Dual control hydraulic system allows instant and positive "fingertip" easy operation for raising, lowering or tilting.

Front mounted 15 GPM Hydrexco hydraulic pump, direct driven from tractor crank shaft, provides "live" power. . . Hold-down platform permits counterbalancing for heavy loads.



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ATTACHMENT, HOLT FARM, and HEAVY-DUTY DOZERS**

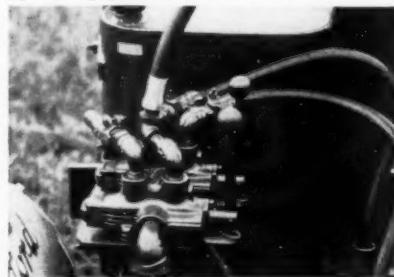
LOW-COST FORK LIFT IS NOW AVAILABLE

Now wasteful time-, labor- and money-consuming steps in produce handling can be eliminated.

Boxes, bales, crates, lugs or field bins are quickly and smoothly picked up and loaded on truck or platform with the Holt Fork Lift.

Bulk handling where pickers empty their loads directly into field bins for transfer to processing plant, eliminates costly repeat sacking or boxing in the field, cuts damage to fruits and vegetables.

Canners prefer pallet method . . . it speeds operation, cuts labor cost.



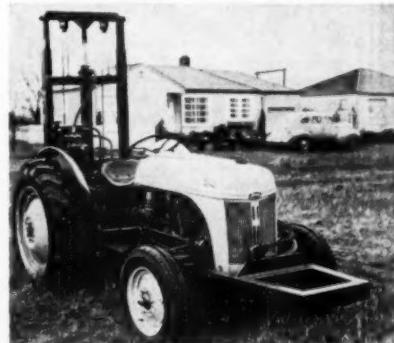
HOLT FORK LIFT Is Field-Proven

The new Holt Fork Lift was thoroughly tested for more than a year on farms and orchards near Independence and Salem, Oregon.

Now, after this tough "produce or else" refining period, the Holt Fork Lift is a tested...and proven...unit that will cut your produce handling costs in half!

Backed by the engineering know-how that produces the West's fastest selling line of farm and industrial bulldozers, the new Holt is a superior fork lift that is ideal for pallet loading.

Use of the Holt Fork Lift cuts handling time in half. Labor costs go down, and the new Holt Fork Lift costs less than any comparable fork lift on the market!



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The Holt Fork Lift comes complete, ready to install. Completely guaranteed, the unit includes hydraulic system and hold-down platform. . . There are no extras to buy! The Holt Fork Lift is simple to attach and detach.

WASHINGTON FRUIT LETTER

- Separate Legislation Urged for Pesticides
- Two Million Yearly Increase in U. S. Population

By LARSTON D. FARRAR

Washington Correspondent, *American Fruit Grower*

APPLE interests headquartered here are on record squarely in favor of the legislation introduced by Representative A. L. (Doc) Miller (R.-Nebr.), designed to implement the basic Food and Drug Act with respect to pesticide chemicals.

Truman Nold, executive secretary of the National Apple Institute, in testifying in favor of the Miller legislation before the House Committee on Interstate and Foreign Commerce, made an extremely forceful statement.

"As users of pesticides for the protection of our crop, subject on interstate movement to the . . . Food and Drug Act, we (apple growers) believe three things are required," he said.

"1—Separate and particular means for dealing with the problems of pesticides on food crops, because their use is a necessity, and by the very nature of their use, they present problems that are distinct and different from all others regulated under the law.

"2—Those who have the first interest in introducing a pesticide for commercial use should carry the responsibility of presenting adequate scientific evidence upon which its safety regulation may be based.

"3—This and all other pertinent evidence must have opportunity to be weighed independently by disinterested scientists having expert knowledge of the particular set of conditions in each case, reporting to the Secretary (of Health, Education and Welfare), who is responsible for issuing and enforcing the regulation."

Mr. Nold answered a question that has been puzzling many: Whatever became of the voluminous data gathered at the tolerance hearings three years ago? He pointed out that no new tolerances have come forth because "a suitable procedure was lacking." He says that the Miller legislation provides such a procedure, in that it makes it possible for an independent study of particular tolerances by committees of disinterested experts.

"The hearing (on tolerances) was no failure," he asserted. "It brought together the most complete collection of data of this kind ever assembled.

"The failure was in the fact that when the evidence was in, there was no prescribed method by which each item could be independently reviewed by a committee of experts on that

item, to result in recommendations that could be acted upon with dispatch.

"No one agency of government can be expected to be staffed with the great number of technicians necessary to cover all these fields of specialization. Even if a few men could do it, it would be wrong to mix the determinations of tolerances with the responsibility of their enforcement . . ."

The pesticides manufacturers generally seem to agree with the apple growers on the Miller legislation.

BECAUSE of the expanding U. S. population, estimates of how much the nation will eat—of fruits and other commodities—in the coming years constantly are being revised upwards.

The U. S. population now is 159.2 million, but by October 1 it will be 160 million, barring catastrophes. There is now a net gain of one person every 13 seconds, almost 300 every hour, and more than two million every year in this country.

Cautious prognosticators say that there will be 190 million Americans by 1975—and that is only 22 years away! In other words, a market—for apples or anything else—as large as pre-war Great Britain will materialize in this country by 1975. That's in addition to the present market.

Representative Walt Horan (R.-Wash.), the best-known apple grower in the House of Representatives, has pointed out that the nation must find some way to get 115 million additional acres under cultivation, merely to grow enough fruit, vegetables, and grains to meet the needs of the population expected by 1975.

From irrigation and drainage, experts can see an additional 45 million acres. Conservation and other types of reclamation, including wiser use of chemicals and fertilizers, must supply the remaining acreage needed.

FLORIDA Citrus Mutual, the huge non-profit association of Lakeland, Fla., accused of violating the anti-trust laws by the Federal Trade Commission months ago, has been exonerated of being in violation of such statutes now, but the organization is pressing for a ruling that will exonerate officials of ever having violated such laws.

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Power for garden tractors, mowers, pumps, sprayers, snow removal equipment, elevators and hoists, mobile saws, concrete mixers, compressors, feed grinders, industrial and lift trucks, and a wide range of tools and equipment for industry, construction, farm and home.

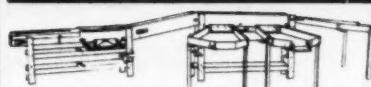
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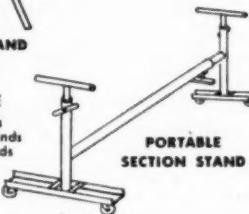


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STATE NEWS

(Continued from page 12)

the University of Florida Agricultural Extension Service.—Clyde Beale, Gainesville.

MASSACHUSETTS—Serious drought conditions have prevailed in the Cape Cod area since the middle of May. The strawberry crop was cut as much as 70 per cent in sections where irrigation was not available, and considerable damage has been done to newly-set beds.

A few apple trees were taken out and some hail damage occurred as a result of the Worcester tornado but the principal fruit areas escaped damage.—O. C. Roberts, Acting Ext. Hort., Amherst.

DELAWARE—Hail did considerable damage to apples and peaches in some areas. Crops of both fruits, however, appear to be larger than expected. Constriction on peaches is increasing.—Robert F. Stevens, Sec'y, Newark.

MARYLAND—Cicada injury to twigs and smaller branches has caused a hectic year for peach growers this year. In some places it was necessary to cut out the broken parts before thinning could be done; and after thinning, as the fruit sized, branches broke back still more. Although the crop will be smaller than in 1952, it should be good, despite these difficulties.—A. F. Vierheller, Sec'y, College Park.

WEST VIRGINIA—Edmund Lee Goldsborough, 85, head of the Shepherdstown, W. Va., Fruit Growers Club and a director of Appalachian Apple Service, died at his home at Shepherdstown June 27. He had also been president of the West Virginia State Horticultural Society.—Carroll R. Miller, Sec'y, Martinsburg.

OKLAHOMA—Continued dry weather is reducing quality and size of both the peach and apple crops. Late spring freeze cut the strawberry crop to the smallest in many years. Native pecan prospects are reported good.—Fred LeCrone, Sec'y, Stillwater.

COLORADO—A good apple crop is expected, and pears will run about 100,000 bushels, the same as last year, but other fruit crops were much reduced as a result of early spring frosts.

Only about 10 carloads of apricots were shipped from the western slope this year, as against 85 last year. A one million-bushel peach crop compares to two million bushels in 1952, and cherry canneries made only one- or two-day runs this year as compared to runs of three weeks a year ago. The fruit was all of excellent quality.—L. L. Mariner, Sec'y, Grand Junction.

MONTANA—Estimates of Montana's sweet cherry crop have been reduced from 4,000,000 to 2,200,000 pounds.—Robert O. Young, Sec'y, Missoula.

MICHIGAN—Crop losses as high as 80 to 100 per cent were reported after the recent wind and hail storms in northwestern Michigan. However, in general, the sweet and sour cherry harvest looks good.

To develop new fresh fruit market outlets, some sweet cherries this year will be marketed with stems on. Dr. D. H. Dewey of Michigan State College is working closely with the program.

More than 20 new 15- to 20-thousand-bushel cold storages are being built by Michigan growers this year to handle the 1953 six million-bushel apple crop. This crop is one million bushels below the 10-year average.—A. E. Mitchell, East Lansing.



HONORARY DEGREE—Ernest Hart, vice-president of Food Machinery & Chemical Corporation, with headquarters in New York City, was recently awarded an honorary doctorate by Michigan State College, East Lansing, his alma mater, for outstanding work in the field of agricultural chemicals. Previous to his appointment as vice-president of Food Machinery last fall, Mr. Hart had been president of Niagara Chemical Division of Food Machinery at Middleport, N. Y.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Aug. 10-13—International Apple Association 59th annual convention, Hotel Sherman, Chicago, Ill.—Norbert W. Eichmeyer, Sec'y, 1302 18th St. N. W., Washington 6, D. C.

Aug. 12—Maine State Pomological Society annual field meeting, Highmoor Farm, Monmouth.—F. J. McDonald, Sec'y, Monmouth.

Aug. 14—Massachusetts Fruit Growers Association summer meeting, Davis Orchard, Bolton.—A. P. French, Sec'y, Amherst.

Aug. 17-21—Citrus Growers' Institute 20th annual convention, Camp McQuarrie, Astor Park, Fla.—R. E. Norris, Lake County Agent, Tavares, Fla.

Aug. 18—Wisconsin State Horticultural Society orchard tour and machinery demonstration, Eames Orchard, Egg Harbor.—H. J. Rahmlow, Sec'y, Madison 6, Wis.

Aug. 20—Annual Orchard Day, Ohio Agricultural Experiment Station, Wooster.—C. W. Elsenwood, Sec'y, Wooster.

Aug. 26—Wisconsin State Horticultural Society joint orchard tour with Minnesota Fruit Growers Assn., LaCrescent, Minn.—H. J. Rahmlow, Sec'y, Wis. Soc., Madison 6, Wis.; J. D. Winter, Sec'y, Minn. Assn., Mound.

Aug. 31-Sept. 2—Northern Nut Growers Association annual meeting and tour, Rochester, N.Y.—George Salter, Vice-Pres., 169 Garford Road, Rochester, N.Y.

Sept.—Illinois State fruit festival, Murphyboro.

Sept. 23-25—Florida Fruit and Vegetable Association annual convention, Casablanca Hotel, Miami Beach. Association headquarters—4401 East Colonial Drive, Orlando, Florida.

Sept. 25-26—Illinois State Fruit Queen Festival and Murphysboro Fall Apple Festival Murphysboro.—Harold J. Hartley, Sec'y, Carbondale.

Sept. 26—Sixth Annual Cranberry Festival, Edenville Plantation, South Carver, Mass.—L. R. Williams, Merch. Mgr., American Cranberry Exchange, 5 S. Sixth St., New Bedford, Mass.

Oct. 5-7—Texas Citrus and Vegetable Growers and Shippers annual convention, Shamrock Hotel, Houston. Association headquarters—806 E. Jackson St., Harlingen, Texas.

Oct. 5-8—Produce Prepackaging Association third annual exposition, Chase Hotel, St. Louis, Mo. Robert A. Cooper, Mgr., 1250 E. Main St., Stamford, Conn.

Oct. 22-31—National Apple Week.—National Apple Week Assn., 1302 18th St. N.W., Washington 6, D.C.

Nov. 3-5—Florida State Horticultural Society 66th annual meeting, Daytona Beach.—E. L. Spencer, Sec'y, Bradenton.

Nov. 5-6—Minnesota Fruit Growers Association and Wisconsin State Horticultural Society joint annual meeting, La Crosse, Wis.—J. D. Winter, Sec'y, Mound, Minn.

Nov. 18—Iowa Fruit Growers Association annual meeting, Iowa State College, Ames.—R. G. Raines, Sec'y, State House, Des Moines.

Dec. 1-2—Oklahoma Pecan Growers Association annual meeting, Chandler.—Fred LeCrone, Asst. Sec'y, Dept. of Hort., Stillwater.

Dec. 3-4—Oregon State Horticultural Society 68th annual meeting, Oregon State College, Corvallis.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 7-9—New Jersey State Horticultural Society annual meeting, Claridge Hotel, Atlantic City.—A. J. Farley, Sec'y, New Brunswick.

Dec. 8-9—Connecticut Pomological Society annual meeting, Hotel Bond, Hartford.—Sherman P. Hollister, Sec'y, Storrs.

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2-QT. CONSUMER UNIT MASTER BOX
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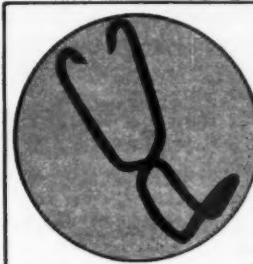
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When you tear off the perforated liner top you have a perfect bulge face pack.

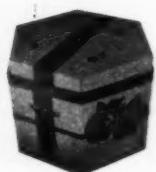
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NEW FOR YOU

For Fancy Fruit



The eight-sided corrugated tray, which the Mission Pak Company of Los Angeles, Calif., is using for its gift packed fruit, is most attractive; and reports show that it has helped increase sales materially. The octagonal corrugated tray is made by Gaylord Container Corporation, and we suggest you write Gordon Hertslet at that company, 111 N. 4th St., St. Louis 2, Mo.

Polyethylene Bags

"See-Safe" plastic bags are being used by many growers because they cost relatively little and have proven themselves in supermarkets and over-the-counter sales. They can be ordered in a variety of colors, and your name and address added for a slight extra cost. If you are considering prepackaging may we suggest you write Mehl Manufacturing Co., 2057 Reading Rd., Cincinnati 2, Ohio, for their attractive booklet with a sample of their bag attached?

It's Easy



The other day we saw a grower using an automatic stapler in his prepackaging operation. The machine worked so well



From where I sit ... by Joe Marsh

Bad Case of the "Ztutters"

Our copyboy is out sick. So the editor (me) is taking over some of his chores—which include running the addressing machine on "mailing-out night."

Last week I didn't have the usual number of papers left over for sale at the office. Couldn't figure what had happened—until Chub Zimmer called to ask why he'd gotten 56 copies.

Then I realized—"Zimmer" is the last name the machine prints. Guess I forgot to turn it off... and it just kept grinding out Chub's name on all the remaining

copies. That machine just didn't know when to stop.

From where I sit, people are like that sometimes. They often don't know when to stop. Like those who are prejudiced against someone with an accent, perhaps... or against someone who likes a cool bottle of beer with his supper. So, in these columns I try to persuade everyone to "throw the switch" on prejudice so it won't get repeated.

Joe Marsh

• PLASTIC BAGS

• OCTAGONAL TRAY

and cost so little we thought our readers would like to get full information. The grower we saw said it saved him up to 70 per cent in time and costs. If you are interested, write The Staplex Company, 68-72 Jay St., Brooklyn 1, N. Y.

When to Irrigate



Most of us would like to know when we should irrigate our orchards so we can save money and make our irrigation systems operate most efficiently. Lemon growers in California have found that a moisture meter does the job accurately and quickly. The "Moisture Measure" performs very satisfactorily as it tells the grower when to irrigate and how much. It is inexpensive, and if you would like complete information write B. F. Klein, B. F. Klein Company, 815 E. Anapamu St., Santa Barbara, Calif.

Wirebound



Many growers report great savings with wirebound boxes. These boxes are easily stored and assembled and lend themselves ideally to shipment by rail or truck for they are readily packed and can be handled economically by packing shed or cold storage workers. If you would like details write Wirebound Box Manufacturer Association, 30 N. LaSalle St., Chicago 2, Ill.

Don't Guess—Know

A new soil acidity test accurately determines the pH factor of all soils. This new unit sells for \$1.98 and does a remarkable job. We think you will agree with us that the Garden Guide Soil Acidity Test is a good investment. If you would like to purchase this unique set write C. V. B. LaMotte, LaMotte Chemical Products Company, Towson 4, Md.

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STRONG, WELL MADE
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CHANGING PREPACKAGING PATTERN

(Continued from page 6)

store customers a wide choice in the sizes of their packages. Losses of the grapes from shattering were considerably reduced when they were prepackaged, mainly because of less customer handling. Savings in waste and spoilage losses about equaled the cost of film bags and the labor required to fill the bags.

Prepackaging of peaches is another example of slow but steady progress. Peaches as well as many other soft fruits are particularly difficult to adapt to prepackaging because of their short season and extreme perishability. However, the gradual decline in the consumption of many of our fresh fruits points up the need for continued efforts to find ways of improving their market quality and appearance.

Naturally, it is exceedingly difficult to increase or even maintain consumption of peaches if they are marketed green or immature, regardless of how they are packaged. For this reason fruit packers have the responsibility of packing peaches and other fruits at more satisfactory stages of maturity. This does not mean tree-ripened peaches necessarily, but it means mature peaches which will ripen so as to produce fine flavor and texture.

The USDA undertook a research project in 1952 to test the commercial feasibility of prepackaging ripe peaches in a commercial tomato prepackaging plant. Serious problems were encountered in this experiment, and additional research is planned to develop better methods of packaging and marketing peaches in a more advanced stage of maturity.

Whether peaches should be packaged in consumer packages or marketed in some other type of improved shipping container, such as cell boxes, is not known. The objective of peach growers and distributors is to deliver a higher average quality peach to the public and thereby to increase sales.

Prepackaging Cherries

Progress is being made also in prepackaging of cherries in transparent film bags. This industry is confronted with a problem of high labor costs involved in hand-packing the conventional double-row faced pack box of sweet cherries. A few shippers in California, Oregon, and Washington have successfully packaged fresh sweet cherries during the past few seasons.

Prepackaging of cherries offers advantages by reducing waste and spoilage losses in retail stores and reducing retail handling costs, as well as providing a more sanitary method

of distributing a product that is widely eaten out of hand.

The fundamental advantages to be gained by prepackaging cherries in consumer-size units are so overwhelming that, in spite of the attractiveness of the double-row faced packed box, it is predicted that cherry prepackaging will increase within the next few years.

Other Soft Fruits

Comparatively little progress has been made in prepackaging many other soft fruits, such as plums, apricots, nectarines, and pears, although more and more retail stores are packaging these extremely perishable fruits in food trays in order to reduce handling damage. Under contract with the California Grape & Tree Fruit League, the USDA is currently investigating the possibilities of developing improved and cheaper shipping containers for fresh plums. It is anticipated that some type of fiberboard box will be tested in comparison with the conventional four-basket crate. Eventually, perhaps this work may point the way toward packaging these soft fruits in consumer-size containers at point of production.

Industry Problems

Nearly everyone is fairly familiar with some of the problems of prepackaging fresh fruits. Many of these specific problems are, for the most part, due to the fact that these commodities are extremely perishable. Plums, for example, are grown in a number of different localities and the harvesting season in any one area is so short and fruit so highly perishable that it is an exceedingly risky venture to set up an adequately financed and equipped prepackaging plant at the point of production.

The comparatively short life of many of these fruits, in contrast to green tomatoes, for example, also makes it fairly hazardous for the terminal point prepacker to package them. Price fluctuations are, of course a factor, and consequently the average fruit prepacker is confronted with an uncertain demand for his prepackaged fruit and the retailer is uncertain of a continuity of supply of the prepackaged fruit.

Of course, many of these problems might be characterized as "growing pains" which normally affect any new industry. However, it is likely that many problems will be solved by further research combined with evolution through successful industry experiences.

THE END

THE BIG SIX DID IT!

(Continued from page 7)

the largest sales in 1950, but there were still questions. With the higher prices of 1951, would the six-pound unit be too large, or would larger units increase sales further? We went out in 1951 to get the answers.

Units of pricing, ranging from two to 10 pounds, were tried, but the six-pound unit continued to remain the winner. Many other types of packaging materials were tested, but none proved better than polyethylene. The results of 100,000 observations in 1951 were identical with those a year earlier even though larger stores located in larger cities were used in the study.

In 1952 the United States apple crop was down 15 per cent and prices were almost double those of a year

enthusiasm led to coining the term "Big Six."

The validity of the tests seems well established with reports of successful application coming from all over the country. The most extensive application has been in western New York, where, during 1952, approximately 70 per cent of the apples sold in retail stores were packaged in polyethylene bags.

But despite the tremendous increase in the use of polyethylene, full advantage of the experimental tests has yet to be taken. The wholesale and retail trade has been reluctant to change from the two- and three-pound displays to the six-pound bag.

Compromises have led to packaging in four- and five-pound units. As a result, merchandising has been improved, but sales have not been maximized. Retailers are slow to lay aside some of their notions that the total unit price of all produce must be kept at a low level despite the fact that apples have been successfully sold at six pounds for 98 cents.

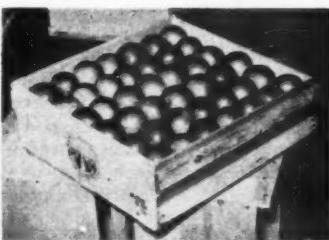
There are some other problems yet to be solved. Outside of New York state few stores are using the combined bulk and package display. It is the presence of bulk fruit along with the six-pound package that makes this size unit a success. Such a display suggests a large purchase, makes that size purchase convenient, and at the same time makes apples available to those occasional shoppers wanting fewer than six pounds.

Quality Affects Sales

Another problem stems from the fact that stores with their high labor costs do not want to do the packaging. As a result they have offered premium prices, making it profitable for growers to do the job on the farm. In many instances apples of rather poor quality in retail outlets have been the result. This is particularly true late in the season when apples are taken out of common cold storage. Preliminary tests reveal that insect injury, mechanical damage, and especially scald are not increased by packaging, but the very fact that damaged apples are present in the packages will naturally hurt sales.

Three years of experiments in apple merchandising show that apple sales are maximized when they are sold in bulk topped with polyethylene packages containing six pounds of apples. This size of pricing unit encourages a large purchase without eliminating those shoppers wanting to buy less than six pounds. The "Big Six" did it! THE END

HANDY ANDY



Fred Larson, Carroll County, New Hampshire, has designed his own apple box. The box is square and uses a minimum amount of material for maximum protection. A piece of corrugated cardboard forms the bottom and folds up around the two wooden end pieces to form the sides. Three slats across the bottom and two across the cardboard sides add strength. The 84-apple pack contains two layers separated by a piece of corrugated cardboard while another square goes over the top and is held in place with three slats. The result is an inexpensive fancy pack that brings a premium price and avoids bruises.—Charles L. Stratton

earlier, but the large polyethylene bag was in general demand. However, as prices continued to rise, many retailers asked for apples packaged in smaller sized units. Because of this trend it was decided to re-examine again the sales effectiveness of the six-pound unit.

The six-pound package sold for as high as 82 cents, but continued to remain the winner. It sold 86 per cent more apples than the two-pound unit and 23 per cent more than the four-pound unit. Similar results were obtained in tests made by the Washington State Apple Commission and their

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MARKETING AGREEMENTS

(Continued from page 11)

Since practically all of the peaches moving from California to eastern markets consisted of Elbertas, this regulation was drafted to apply to the Elberta variety only. The organization responsible for the administration of these regulations was then and is now referred to as the Elberta Committee of the California Tree Fruit Agreement.

Two Influencing Factors

During the years between 1939 and 1949, two factors began to influence the peach marketing situation in California. These factors were, first, the growing importance of California state markets due to the tremendous influx of population into the state and, second, the ever increasing volume of cull or substandard fruit that developed from the interstate shipping business.

The concurrence of these two factors reached its climax in 1949 when an unusually heavy crop of peaches was produced in California. Of the three million lugs sent to local markets, perhaps 30 to 40 per cent were substandard in quality or actually packing house culs. The result was a completely demoralized market of historic importance.

Again the industry turned to a quality control program as authorized under the California Marketing Act of 1937. The Marketing Order as drafted under the authority of this act contained provisions for the regulation of grade, size, maturity, and pack of all fresh peaches grown and sold within the state of California. It was these regulations that gave the consumer a stabilized quality that in turn stimulated acceptance to a gratifying degree.

Administrative Difficulties

Soon after the decision was made to effectuate the California Fresh Peach Marketing Order, many administrative difficulties began to appear. The very geographical size of the state was one obstacle and the fact that in excess of 1,700 or more growers and several hundred handlers would be involved in the Marketing Order constituted another difficulty.

However, a determined attempt was made to resolve these problems and the Marketing Order became effective May 1, 1950. Arrangements for inspection were made with the county commissioners who were thereafter to assume the major part of the inspection burden. The Bureau of Fruit and Vegetable Standardization and the Bureau of Ship-

ping Point Inspection also participated.

It is interesting to note that this quality control program has been quite successful even though it makes use of a system of inspection that is permissive rather than mandatory. During the harvest season of 1952, almost 85 per cent of the fresh peaches moving in the channels of intrastate commerce were covered by this type of inspection.

Monetary Value

The monetary value of a program of the nature of this Fresh Peach Marketing Order is always difficult to appraise. We do know, however, that in one county, San Diego, where a spot check was made after the first season of operation, the growers enjoyed a net return of approximately 100 per cent greater than their return of the previous year, 1949.

We know that the volume of peaches moving into the fresh markets of California last year was approximately the same as the volume that moved to the same markets in 1949. In 1952, however, the growers received substantially three times as much money for each lug of peaches as compared with the amount they received in 1949.

THE END

PEACH SCAB

(Continued from page 12)

During the portion of the season before the fruit is harvested, the new twig growth remains smooth, but since spraying operations stop with the harvesting of the fruit, the new shoots are left unprotected during the balance of the season.

By the time the leaves drop in the fall these shoots are dotted with tiny circular scab spots or lesions that are the only known means by which the fungus overwinters. These spots are superficial and usually do not affect the growth of the shoots, but occasionally on neglected trees the fungus may girdle and kill the small twigs. Even when the spots are not particularly numerous, they give the twigs a roughened, diseased appearance that frequently alarms the grower.

Occasionally, in the fall, the scab fungus develops on the undersurface of the leaves, forming irregular patches of brown growth. This phase of the disease is of no commercial importance.

Control. The scab fungus grows very slowly and infections take place at least 40 days before the spots become visible. Numerous experiments and many years of practical experience have shown that one spray of sulphur, six to eight pounds per 100 gallons of water, thoroughly applied two weeks after the shucks have shed, will give almost perfect control of the disease on the fruit.

The timing is critical and the spray must be applied during this period or the fruit will be infected and develop spots 40 to 60 days later. On varieties maturing later than Elberta, a second application should be made about four weeks after the first.—John C. Dunegan, USDA.

The Orchard Home

THIS is the time when you will want to be thinking of the different ways to use your fresh, juicy peaches and pears. Why not serve a cool, mouth-watering salad made with either peaches or pears. And, after a heavy meal when no one feels especially interested in cake or pie but yet something to complete the meal, who can resist an attractive fruit bowl filled to the brim with fresh peaches, pears, and other fruits which are in season.

Pictured at the right is a luscious looking Peach Upside Down Cake to whet your appetite. The brown sugar added to the peaches will give the upside down cake just a tinge of butterscotch flavor. You can serve it plain, or if you want to dress the cake up, top it with whipped cream.

Below is the recipe for Peach Upside Down Cake together with other peach and pear recipes:

PEACH UPSIDE DOWN CAKE

$\frac{2}{3}$ cups sifted cake flour
 $\frac{2}{3}$ teaspoons baking powder
 $\frac{1}{4}$ teaspoon salt
 $\frac{1}{2}$ cup shortening
1 cup white corn syrup
2 eggs, unbeaten
 $\frac{1}{3}$ cup milk
 $\frac{1}{2}$ teaspoons vanilla
Peach halves
 $\frac{1}{2}$ cup brown sugar
 $\frac{1}{4}$ cup butter
Walnut meats

Sift dry ingredients together three times. Cream shortening until fluffy; add syrup gradually, beating thoroughly after each addition. Add one-fourth flour mixture and blend well. Add eggs, one at a time, beating well after each. Then add remaining flour mixture alternately with milk. Butter a deep cake pan generously with the $\frac{1}{4}$ cup butter, and line with $\frac{1}{2}$ cup brown sugar. Place peach halves with pitted side next to brown sugar. Over this pour cake batter. Bake 45 minutes at 375°F . or until done. Place a walnut half in each peach.

PEAR FRUIT CUP

2 pears, diced
1 small bunch grapes
Cantaloupe cubes or balls
1 pint gingerale

Cut cantaloupe into cubes or make balls. Wash grapes and remove stems. Wash,

quarter, core, and dice pears, leaving skin on. Place a combination of the three fruits in cocktail glasses and chill thoroughly. Cover with gingerale just before serving. Serves four.

FROSTED PEARS

4 ripe pears
2 3-ounce packages cream cheese
4 tablespoons cream
 $\frac{1}{2}$ cup chopped nuts

Wash and dry pears, selecting those with stems. Whip together cream cheese and cream to a spreading consistency. With a knife or spatula, spread cheese over pears. Sprinkle or dip pears into ground nuts. Place in refrigerator to chill until ready to serve.

BUTTERSCOTCH PEACH PIE

1 recipe plain pastry
 $\frac{3}{2}$ cups sliced peaches
 $\frac{1}{2}$ cup brown sugar
2 tablespoons flour
 $\frac{1}{8}$ teaspoon salt
 $\frac{1}{4}$ cup butter
2 teaspoons lemon juice

Place peaches in a 9-inch pastry-lined pie pan. Combine brown sugar, flour and salt; add butter. Cook until thick. Remove from heat, add lemon juice, pour over peaches. Make a lattice crust for top of pie. Bake in a hot oven, 425°F . 30 minutes.—Selma Bergman, Dinuba, Calif.

OLD-FASHIONED PEACH COBBLER

3 cups sliced peaches
 $\frac{1}{2}$ cup sugar
1 cup water
2 tablespoons flour
 $\frac{1}{4}$ teaspoon salt
1 tablespoon butter

Peel and slice peaches into a well greased casserole. Combine sugar, flour, and salt, and stir into peaches, mixing well. Add water, stirring until all are well blended. Cover and cook in a moderate oven until peaches are almost tender, about 30 minutes. Prepare rich biscuit topping by mixing your favorite recipe. Make it of a soft



dough consistency that can be dropped from a spoon. Drop it onto peaches, leave off cover, turn up heat to 450°F ., and bake, uncovered, for 15 to 20 minutes or until topping is nicely browned and cooked through.—Mrs. Blanche Campbell, Las Vegas, Nev.

MOLDED PEAR SALAD

3 envelopes plain gelatin
 $\frac{2}{3}$ cups gingerale
1 cup hot water
2 tablespoons lemon juice
 $\frac{1}{4}$ cup sugar
 $\frac{1}{8}$ teaspoon salt
Few drops green coloring
4 ripe pears
1/2 packages cream cheese
Maraschino cherries
Walnut meats

Soften gelatin in 1 cup of the gingerale about 5 minutes. Add hot water, remaining gingerale, lemon juice, sugar, and salt. Chill until thick and syrupy. Peel, halve, and core pears. Sprinkle with lemon juice. Arrange halves in shallow pan. Soften cream cheese and roll into balls. Stuff a cheese ball in hollow of each pear. Decorate with cherry and walnut. When gelatin is thick and syrupy, pour over pears. Chill until firm. To serve, cut in wedges, allowing one pear half per serving. Serves 8.

SPICY PEAR PIE

6 to 8 pears, sliced
1 tablespoon cornstarch
 $\frac{1}{2}$ to 1 cup sugar
 $\frac{1}{8}$ teaspoon salt
1 teaspoon cinnamon
 $\frac{1}{4}$ teaspoon nutmeg

Mix cornstarch, sugar, salt, cinnamon, and nutmeg together. Line pie pan with uncooked crust. Sprinkle one-half sugar spice mixture over bottom crust and add remaining mixture to pears. Fill pie pan. Sprinkle with 1 teaspoon lemon juice. Make lattice top crust. Bake in hot oven 450°F . 30 minutes, then in moderate oven 350°F . 30 to 40 minutes, until done.—Frances Christopher, Ft. Worth 3, Tex.

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A good basic pattern will provide your youngster with several school dresses for the coming season. This sweet one-piece dress can be made with a contrast blouse or skirt. Make it in a cotton gabardine for

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Send order and cash for patterns to Pattern Department, American Fruit Grower, Willoughby, Ohio. Be sure to specify size. Print name and address clearly.



6488

American Fruit Grower

RICHARD T. MEISTER, Editor
H. B. TUKEY, Associate Editor

• Fruit for Health •

Do We Appreciate Modern Packaging?

THE GREATEST requirements for lumber, we are told, are not for building, nor for paper print, but for packages, crating, and shipping needs. This statement is hard to believe until one stops and looks at the items he buys and the way they arrive. They are manufactured in specialized areas by specialists in the field, and then they move great distances to the man who made the purchase.

We often fail to realize the contribution of the package manufacturer and the shipping expert in helping to bring about the system which is so much a part of our economy. How unlike Europe this is. Ours is a non-returnable package or "gift" package system, whereas much of the European economy is based on the returnable package. On the other hand, in Europe distances are shorter between producer and consumer than in America, so that transportation is less costly. In this way each group adapts itself to its own particular situation.

The trend is definitely towards the small container. It is hard to look back and recall the apple barrel and the large vegetable hamper. The box and the crate have taken over, and they in turn are threatened by various cardboard and fiber boxes. Yet here again, we find wood is the basic material.

It seems reasonable to expect that the next step will be for still further specialization and fabrication in containers for specific needs, and that this may mean the entry of plastics in a large way.

Already various films are used satisfactorily for fruits and vegetables. Some disappointment in the early days resulted from a misunderstanding about plastics themselves. Somehow we got the impression that all transparent films were the same. But soon it became understood that one film permitted one gas to pass through it but excluded another. Oxygen moved through one and not another. Water moved through one and not another, and so on.

The breakdown of asparagus in a given film was due to accumulation of

various gases with attendant spoilage and off-flavors. Or, shriveling of produce in one type package was caused by water vapor moving easily from the package.

Now much of this is understood. If a package is desired for a certain purpose, an expert in the field of packaging is called in for counsel. Generally speaking, the film which permits movement of oxygen but prevents permeation of water is useful for perishable produce.

And even the checking of loss of carbon dioxide may have advantages. For example, in some instances a build-up of carbon dioxide within the package may slow down respiration and reduce chemical changes in the produce. This is much after the idea of the modified atmosphere storage, in which the respiring fruit builds up carbon dioxide in the atmosphere to a point where the fruit virtually preserves itself—much like stewing in one's own juice!

In all of this the package manufacturer has made most important contributions. We have perhaps taken him too much for granted. It will be interesting to see what further advances he suggests and what further contributions he makes to this important side of the fruit and vegetable industry.



Fruit Talk

Santa Fe's new train, No. 62, carrying perishable fruit takes its name from a running time of 62 hours from California to Chicago, compared with 110½ hours for regular freight, 39½ hours for the Super Chief, 96 hours for most trucks, and 72 hours for special trucks.

The number of apple trees in Washington state has been cut approximately two-thirds between 1920 and 1950, from a little more than 7½ million to a few more than 2½ million trees. Yet production has been maintained at approximately the 30-million-bushel mark per year.

California, Washington, and Oregon are discussing a tri-state cherry promotion program.

The growing importance of fruits and vegetables is shown by the percentage increase in production during the last 30 years, namely 139.7 per cent for 13 fruits, 255.3 per cent for 8 commercial vegetables for processing, and 174.5 per cent for 17 vegetables for fresh market. This compares with only 128.8 per cent increase for 22 field crops.

California canned Gravenstein applesauce is expected to reach 1.2 million cases—nearly double that of last year and nearly three times that of the previous year.

The Long Ashton Research Station is celebrating its Jubilee Year. Located just outside of Bristol, England, it was established in 1903 to undertake research in cider and perry. Perry, made from the juice of pears, is not at all well known in America, but is considered one of the choice European drinks. The Black Huffcap pear is said to have an original specific gravity of over 1.100, explaining the old names "Angel's Food" and "Dragon's Milk"!

Says John H. Davis of the USDA, "It is my firm belief that we will make infinitely more progress towards integrating production and marketing in a manner that will stabilize prices if we place the chief responsibility on private enterprise rather than on government."

Karl Hendershott, manager of the Lake Chelan Fruit Growers in Washington state, reports that prices for 749,000 boxes of apples packed by his organization in 1952 brought the highest price in history, with an average of \$4.09 per box f.o.b. the car for all varieties, grades, and sizes.

V. W. Kelley of Illinois has shown that an adequate supply of potassium in the soil decreases low-temperature killing of peach trees.

Sweet-kernelled peaches which are late blossoming and self-fertile are part of the breeding program of McCarty, Lesley, and Frost in California.

Vine decline, faulty fruit development, and mosaic-marked leaves with pale marginal and interveinal parts, have been associated with boron deficiency in Germany.
—H.B.T.

Coming Next Month

- Predicting Apple Prices
- How to Time Your Picking Dates
- The Right Time to Pick Peaches
- How Temperature and Sunlight Influence Cherry Ripening
- How to Overcome the Harvest Labor Problem



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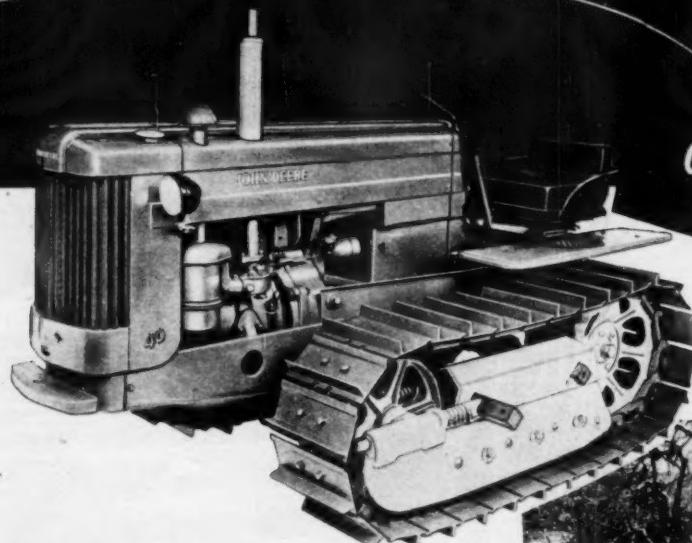
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